## CLAIMS

What is claimed is:

1. A method of calculating a predicted lens power needed to provide a post-operative spherical equivalent to correct myopia in a phakic eye of a patient using an intraocular lens, the method comprising the steps of:

a. measuring pre-operative and post-operative characteristics of the eye, including spherical equivalent, vertex distance, anterior chamber depth, keratometry, desired post-operative spherical equivalent, and first eye residual intraocular lens power; and

b. using each of the measured pre-operative characteristics and desired post-operative characteristics in a lens power prediction model to calculate the predicted lens power; and

c. wherein the lens power prediction model is a mathematical formula using the measured pre-operative and desired post-operative characteristics of the eye and corresponding coefficients substantially as follows

3.9546
+ 0.4001 * PreMSE
+ 0.4272 * PreCSE
+ ( PreMSE - (-12.6676)) * (( PreCSE - (-12.5002)) * -0.2723)
+ ( PreCSE - (-12.5002)) * (( PreCSE - (-12.5002)) * 0.1308)
+ ( PreMSE - (-12.6676)) * (( PreMSE - (-12.6676)) * 0.155)
+ -0.7378 * ACD
+ -0.042 * AXL
+ ( PreMSE - (-12.6676)) * (( AXL - 27.6371) * 0.0843)
+ ( ACD - 3.6609) * (( AXL - 27.6371) * 0.2639)
+ ( PreCSE - (-12.5002)) * (( ACD - 3.6609) * 0.1064)

+ ( PreCSE - (-12.5002)) * (( AXL - 27.6371) * -0.0698)
+ -0.065 * PreKStp
+ -0.1043 * POMSE
+ -0.2801 * POCSE
+ ( POMSE - (-0.5511)) * (( POCSE - (-0.4173)) * 0.0675)
+ 0.0027 * Age
+ ( Age - 39.4711) * (( PreKStp - 45.4349) * 0.007)
+ ( PreCSE - (-12.5002)) * (( ACD - 3.6609) * (( AXL - 27.6371) * -0.028))
+ 0.4752 * First Eye Residual
+ 0.40 * PredChgAveK

wherein PreCMAv is a weighted average of the pre-operative cycloplegic and manifest spherical equivalents (PreCSE and PreMSE),

AXL is the axial length,

POMSE is the desired post-operative manifest spherical equivalent.

POCSE is the desired post-operative cycloplegic spherical equivalent,

PreKStp is the preoperative steep keratometry measurement,

PredChgAveK is the predicted change in average keratometry,

ACD is the anterior chamber depth,

PreKAv is the pre-operative average keratometry, and

First Eye Residual is the residual intraocular lens power found after the first eye surgery.